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Research Report

Through the looking glass

University of Alberta professors examine the business of farming

The ten year period between 1974 and 1984, says Len Bauer, a professor of rural economy at the University of Alberta, was one of almost constant economic turmoil for Alberta farmers. It began well enough – commodity prices were high and property values were growing rapidly. Optimistic farmers expanded their operations, often with the help of bank loans. But the boom didn't last. In the early 1980s, bank interest rates skyrocketed, land values plummeted and commodity prices wavered. While many farmers managed to emerge from the slump unscathed, a good number, whether by overextending themselves or because of circumstances beyond their control, were suddenly caught in difficult financial positions.

Throughout the last half of that decade, with the help of a $241,440 grant from Alberta Agriculture's Farming For the Future program, Dr. Bauer and his associates at the University of Alberta Farm Management Field Laboratory conducted a study they hope will provide farmers, researchers and government policy makers with new ideas and information for solving current farm financial problems and avoiding others in the future. They pored over the balance sheets and income statements of 16 Alberta farms, carefully monitoring the financial performance of each. "We have always had a limited knowledge of what's really going on in farm businesses because there haven't been a lot of studies done that observe the same farms over a long period of time, through different market conditions," says Dr. Bauer. "This study gives us a good data base to work from."

The 16 farmers were selected to represent a typical segment of Alberta's commercial agriculture sector. Because of the technical nature of the study, preference was given to farmers with above average management capabilities. Each farmer kept complete, continuous financial records for the five years of the study.

All of the operations entered the 1980s in good shape, but their earnings dropped by an average of 50% from 1980 to 1981 and remained at that level until 1983. There was a slight recovery in 1984. Ten of 16 farms experienced at least one annual loss over the period. Three had losses in three of five years and one had losses four years out of five.

However, the 16 farmers posted an average annual gain in equity of 6.55%, which Dr. Bauer says is reasonable for the times. "All of them are good farmers," he says. "That is, they were good at managing production. They have great technical knowledge of husbandry, as growers of grain and feeders of livestock. They were not impulsive about financial decisions and were reasonably good at projecting what was a good or bad investment. But I was shocked to see, in some cases, that a farmer running a million dollar business wouldn't know what his balance sheet looked like. They had good intuitive feeling of where things stood, but they weren't sure what bills had been paid, or how much was in the bank."

All of the operators agreed their participa-

(continued on back page)

INSIDE:
The cow's in the corn

A crate new idea

Mr. Jones' birthing system saves lambs

Alberta sheep producers have long been searching for ways to offset the high mortality rate of newborn lambs (it is often over 15%). "The death loss," says Trevor Jones who keeps 180 ewes on his farm three miles northeast of Fairview, "is what breaks the back of the sheep person." Most of the new initiatives have attempted to improve production by increasing the size of litters. For instance, some farmers have taken to breeding Finnish sheep which have multiple offspring (usually between three and six), while others have been using expensive hormones to increase the ovulation rates of their ewes. The number of lambs born has increased, says Mr. Jones, but so has the mortality rate, resulting in "little real gain." Backed by a $3,505 Alberta Agriculture Farming for the Future grant, he approached the problem from a different direction and achieved remarkable results.

A former animal science teacher at Fairview College who gave up the classroom for the farm, Mr. Jones concentrated not on increasing litters but on decreasing the mortality rate. One major reason for the high death loss, he determined, is mismothering – a phenomenon that occurs when a ewe loses or rejects her lamb because too many animals and offspring are crowded into a small area. The newborn, in such cases, can starve. The cold of the sheds in which most Alberta ewes give birth is also dangerous to the offspring.

Mr. Jones designed and built what he calls a "stanchion lambing unit" out of ordinary two-by-fours and plywood. It is 13.5 feet wide, 56 feet long, raised a foot off the ground, and divided into 32 private compartments, or crates. In essence, it is a maternity ward for ewes. He places each pregnant ewe in a stall at 140 days of gestation (two days before lambing). She gives birth in privacy, with stall temperatures that are about 5 degrees Celsius higher than outside, and without assistance.

> *"The death loss is what breaks the back of the sheep person."*

Mr. Jones' findings were consistent with his earlier results obtained during 10 years of experimentation at Fairview College. He charted a 1% death loss in the crates compared to a 17% death loss in conventional shed lambing systems. Mismothering, he says, ceases to be a problem in the crates. Indeed, the bond between mother and offspring strengthens, eliminating separation losses which one might expect once they are removed from the crates. The spread of disease bet lambing ewes and other pregnant ewes – a common lem in sheds – is also eliminated (the rear of the cr slotted so that excrement and fetal fluid drop thro Because of the close confines, fewer newborns are cr

Trevor Jones standing in lambing crate

The cow's in the corn

A Camrose farmer finds an alternative to barley silage

Ivo Weder started in the dairy cattle business 25 years ago in his native Switzerland. He fed his cows corn silage, which he produced himself, and the results were generally satisfying. He immigrated to Alberta in 1975, settling on a 24 acre dairy farm six miles east of Camrose where he planned to run his business in much the same manner as he had done in his homeland. He soon learned, however, that the growing season was neither warm enough or long enough to produce corn. He fed his herd a silage made from barley and field peas but didn't get the kind of results he wanted. With the help of a new variety of corn and a $1,156 grant from Alberta Agriculture's Farming for the Future On-Farm Demonstration Program, he was soon packing his silos with corn again.

Barley is commonly used as silage in north-central Alberta. Mr. Weder added field peas to his to increase its protein value. The results were sometimes disappointing. Seed peas are expensive and barley, if it isn't harvested right on time, will over-ripen. "Corn is superior to barley-pea", says Alberta Agriculture's District Agriculturist in Camrose, David Samm, "for a number of reasons – it is higher in energy and it yields more tonnes of silage per acre."

Camrose-area dairy farmers have seldom considered growing corn because of the climate. The amount of heat needed to successfully grow a crop is measured in heat units, and most varieties of corn require about 2,800 heat units annually while Camrose receives only about 2,000. Breeders have long been trying to develop new varieties which require less heat, and Pioneer 3995 is a recent success. It requires about 2,150.

> *"Corn is superior to barley-pea for a number of reasons – it is higher in energy and it yields more tonnes of silage per acre."*

In 1984, Mr. Weder planted barley-pea and Pioneer 3995 side by side in 20 acre plots. The cost of growing corn was $91 per acre, $66 per acre higher than the barley-pea combination. The latter required no fertilizers or herbicides or spraying, and the cost of seeding was much lower. The corn, however, produced about 15 tonnes of silage per acre, worth a total of about $9000. The barley-pea crop produced about nine tonnes per acre, worth only $5400. The bottom line shows corn $114-per-acre better than barley-pea. What's more, during the eight weeks that the corn silage was fed to his cattle, the average milk fat test went up 0.5% over the previous year, increasing the value of the dairy product considerably.

The demonstration, says Mr. Samm, attracted quite a bit of interest in the Camrose area. Over 100 farmers toured Mr. Weder's operation. Not surprisingly, there has since been a significant increase in the number of farmers growing corn for silage in north-central Alberta.

Ivo

under their mother's weight.

Mr. Jones, who is now a Regional Livestock Specialist for Alberta Agriculture in Fairview, says his system requires more planning and management on the part of the farmer than the traditional system. For instance, a sheep producer using crates needs to control breeding and monitor his pregnant ewes' schedules so he can determine exactly when to segregate them. There is also a capital investment of about $56 dollars a crate, which can easily be paid for through reductions in mortality rates. Mr. Jones can't understand why Alberta farmers haven't adopted his procedure. Out of every 100 ewes, he says, a producer can expect 25 more lambs at $110 apiece. His crates have garnered interest from Brazil, Argentina, Australia, Vermont and Minnesota, but he knows of no farmer in his home province who has adopted crates. "I guess they don't want the extra work," he says. "They would rather go on the numbers."

John Knapp, an Alberta Agriculture sheep specialist, also notes that the crates haven't caught on. He says the principles advanced by Mr. Jones are reasonable and that the system will indeed bring a lower mortality rate without increasing labor costs. He suspects the capital investment has been the biggest stumbling block. "Like all good things," he says, "it has a price tag."

nd his corn silage

FARMING FOR THE FUTURE

by Bill Dent
Assistant Deputy Minister Field Services

The Field Services Sector is responsible for the delivery of departmental programs directly to farmers and farm families. A large share of the Sector's activities involve the provision of extension education and services to producers. The department's extension effort is carried out by a province-wide front line force of about 92 District Agriculturists and 62 Home Economists in 66 district offices. Backing up the district staff are teams of specialists in each of the six regional offices. They include specialists in: livestock production; farm management; soils; cereal, oilseed, forage and special crop production; weed control; agricultural engineering; dairy production; swine production; and marketing.

Every means of communication, including telephone calls, office visits, farm visits, courses, meetings, seminars, conferences, on-farm demonstrations, field days and tours are used to transmit information to producers. Staff also make extensive use of the media, local newspapers, radio and television, and regularly issue newsletters.

Field Services staff work closely with producers and producer groups, agricultural service boards and commodity groups. These include: the Alberta Cattle Commission; Alberta Canola Growers; Soft White Wheat Producers; Western Barley Growers; a number of forage associations; the Chinook Applied Research Association; the Smoky Applied Research and Demonstration Association; and numerous other producer groups. Field Services staff also co-operate with various agri-business firms in conducting courses and establishing on-farm demonstrations.

While the provision of information on established and proven technology continues to be important, the provision of information on new technology is a critical function of Alberta Agriculture. Research and extension are closely linked. As new technologies are developed, they are communicated to farmers and ranchers. One means of communicating new techniques to producers is Alberta Agriculture's Farming for the Future On-Farm Demonstration Program. In an On-Farm Demonstration, a producer tests a new idea to see if it will work on his farm. Other farmers in the district can see the technique in action and observe the results on an operation like their own.

A major study of Alberta producers found that they rated friends and neighbors as the most useful sources of agricultural information. Seeing is believing. Our Field Services personnel are pleased to be part of this important technology transfer effort.

In this issue of Research Report you can read about the participation of David Samm, a District Agriculturist in Camrose; Rob Hand, a Regional Livestock Specialist in Barrhead; and Trevor Jones, a Regional Livestock Specialist in Fairview. In almost every issue, you'll see the involvement of Alberta Agriculture's extension staff. And that's the way it should be – involved and at the leading edge of technology transfer.

Beauty is only skin deep

Producers are bullish on the Kinsella line

Multi-colored, spotted and blotchy, synthetic cattle aren't the prettiest animals in the world. But appearance has nothing to do with how beef tastes on the plate, nor does it affect how quickly and efficiently cattle grow. In fact, University of Alberta scientist Dr. Mahmoud H. Makarechian has just completed research which proves synthetic cattle, produced by the careful mixing of a variety of breeds, outgrow their purebred and crossbred brethren by a significant margin. They are also healthier, easier to manage, and more efficient in reproduction, all of which makes for a commercially superior herd.

"There's a much better chance of getting increases in specific performance traits if you pay no attention to color,"

Synthetic cattle differ from purebreds and crossbreds in some significant ways. The former are always mated to each other – Hereford with Hereford, Angus with Angus – and have recognizable characteristics of color, size, horn, etc. Crossbreds are the progeny of two different purebreds, say, a Hereford and an Angus. Cattlemen have long known that the wider gene base of crossbreds makes for stronger, more productive cattle, but the procedure has its limitations. Purebred parents are not always readily available, and there is always a fraction of the cow population that remains purebred so that the full advantage of crossbreeding is never realized. Synthetic breeding thoroughly mixes the genes of a number of breeds – usually two or three – over a period of time, with no regard for purity and no need for purebred parents.

With the assistance of an $82,000 Alberta Agriculture Farming for the Future grant, Dr. Makarechian put the performance of synthetic bulls to test. The synthetic line he used is composed of Angus, Charolais and Galloway. Angus are known for their maternal abilities, particularly milk-production, while Charolais have a high growth rate and Galloway are hardy and weather-resistant. The synthesis was developed in the 1960s at the University of Alberta's ranch at Kinsella, Alberta, by Dr. Roy Berg, at present, Dean of Agriculture and Forestry.

The field testing of the bulls required the help of 20 independent producers across the province. They divided their cows randomly into two herds, one of which was serviced by Kinsella bulls, the other by bulls of the producer's choice. A total of 396 calves were produced. The average birth rates of calves were roughly the same in the synthetic and control groups. However, the progeny of the synthetic bulls were, on average, 10 kilograms heavier than the control progeny at the end of weaning, giving them each a market value of $14 or $15 more than animals in the control group. They were also more efficient at converting feed to weight. Synthetic calves that did not go to market are believed to have continued out-gaining the control groups in the feedlot (no data was recorded, however).

Dr. Makarechian, his assistant and a Kinsella bull

Rob Hand, an Alberta Agriculture regional livestock supervisor in Barrhead, says the research results mean that producers using synthetics are "headed in the right direction. A 10 kilogram weaning weight gain is significant." For John Stewart-Smith, president of Calgary's Beef Boosters Cattle Alberta Ltd. where Kinsella synthetics have been used since 1970, the research confirms what he has known for some time. "There's a much better chance of getting increases in specific performance traits if you pay no attention to color," he says. "We have all kinds of funny colored animals . . . but if you're concerned with producing beef, it doesn't matter."

Through the looking glass...continued from page 1

tion in the study was a beneficial experience. Says Ted Strilchuk, a grain farmer southwest of Ryley, Alberta,"I keep a good set of books now. Anything I want to find – crop reports or field analysis – I can find it. I'm more efficient. I watch where my dollars go." Agrees Harold Luce, a grain and hog farmer west of Ponoka, "I learned a fair amount, especially about real farm costs, farm accounting and different financial situations. I hope it's made me more profitable. I have a much better handle than I had on my return on investments. My accountant was impressed."

And that positive experience is captured in the information and results produced by the Farm Management Field Laboratory. It's there for other farmers, like Mr. Strilchuk and Mr. Luce, to access, as well as for teaching and further research work at the University of Alberta.

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